



ABSTRACT SUBMISSION

From the mountains to the field: on the importance of soil science to better understand arid landscapes formation and exploitation in Arabia

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Abstract

Arid soils are often weakly developed and shallow. Unfortunately, they are often the only archive available to reconstruct the history of natural and cultural landscapes. Indeed, they form under the influence of climate and plant growth, but they also record anthropogenic activities and are key-resources for agricultural development. In the Arabian Peninsula, most of the preserved soils are located in oases, as a result of favourable hydro-sedimentary conditions and human activities. Oasian soils are therefore crucial archives to assess human-environment interactions and land-use throughout the Holocene. However, deciphering anthropogenic from natural soil properties-processes (eg. issue of equifinality) and the degree of preservation of both signatures are challenging. To overcome these issues and properly reconstruct site formation processes, paleo-pedological studies should be combined with experimental pedology and the creation of soil reference collections. Sedimentary/geochemical analyses will help to understand the origin of the deposits, while physico-chemical and micromorphological studies will contribute to assess soil properties, resource management and decipher post-depositional processes. The multiplication of local studies is key to document large-scale landscapes dynamics based on a pedogeomorphological and chronological approach. Juxtaposing our results with climatic and archaeological data will help properly decipher the driving factors of landscape formation through time.

Keywords

Arabia, Oasis, pedology

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